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(54) **MODULAR ASSEMBLY FOR A PORTABLE HEMODIALYSIS SYSTEM**

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(57) **ABSTRACT**

A modular assembly for a portable hemodialysis system may include a dialysis unit, e.g., that contains suitable components for performing hemodialysis, such as a dialyzer, one or more pumps to circulate blood through the dialyzer, a source of dialysate, and one or more pumps to circulate the dialysate through the dialyzer, and a power unit having a housing that contains suitable components for providing operating power to the pumps of the dialysis unit. The power unit may be selectively connected to the dialysis unit and provide power (e.g., pneumatic power in the form of pressure and/or vacuum) to the dialysis unit for the pumps when connected to the dialysis unit, but may be incapable of providing power to the dialysis unit when disconnected from the dialysis unit. The dialysis unit and the power unit are sized and weighted to each be carried by hand by a human.